



Environmental Protection Department

Our Mission is to protect, monitor, restore, and regulate Morongo's natural resources, honoring and protecting all life, land, and traditions and enhancing tribal sovereignty. We will promote environmental awareness and environmentally considerate actions by exemplifying environmental stewards, fostering collaborative relationships, expanding education and outreach activities, and continuing to enrich and develop our programs.

Environmental Education at Morongo Schools

Written by: Jessica Southard, Administrative Assistant

Every spring, the Environmental Protection Department staff have the privilege of joining the Morongo Schools for Environmental Science Education. The students learn about the different environmental protection programs in place on the Reservation, and how to respect their Environment. The lessons range from Pollution Prevention & Recycling, Water Quality, Air Quality, GIS & Mapping to Art in Nature. The Environmental staff enjoys teaching the children the different lessons and the children seem to have fun learning.

Look for some of their work on display at our Earth Day event on April 22nd!

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Pre-Kinder maps/GIS lesson



1st grade pollution prevention lesson



5th & 6th grade e-waste containers



5th & 6th grade photography lesson



1st grade water lesson



Seasonal Photo Contest

Written by: Jessica Southard, Administrative Assistant

Check out these amazing images from the Morongo Reservation and surrounding area.



The Morongo Environmental Protection Department would like to congratulate

***Debbie Gandara,
Social Services***

for winning 1st place in the Winter Seasonal Photo Contest with the photo titled ***“Waking up after a beautiful rain and snow on the reservation”***

The winner received a \$50.00 gift card to a local business. 4 photos were submitted. Photographers remained anonymous and all employees who had access to a computer were allowed to vote for their favorite photo.

***Spring
Entries are
Due
June 1st***

Congratulations to ***Marla Torres-Aguilar,
Morongo Administration*** who submitted the Runner-Up photo.



Submit your photos for a chance to win a gift card to a local retailer!

Submissions need to be original photographs taken between March 1 and May 31, 2016 within the Reservation or the surrounding San Geronio Pass and can be anything related to the environment.

Tribal members, descendants, community members, and employees are all welcome to participate!

To submit your photo for the photo contest, upload your pictures at: www.morongonation.org/content/environmental-seasonal-photo-contest Or email photos and a description to: environmental_department@morongo-nsn.gov

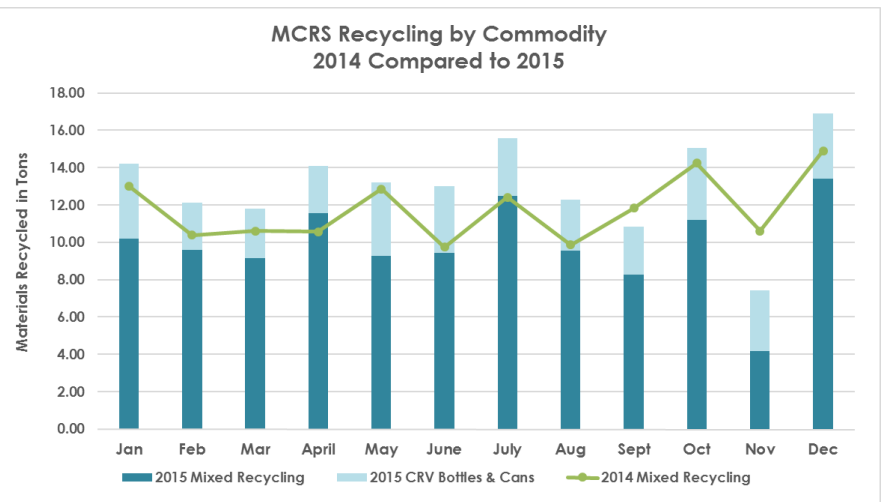
If you need assistance uploading your photo or you have any questions about the photo contest, please contact the Environmental Department at 951-755-5128.

Pollution Prevention Program Updates

Written by: Dana Morey, Environmental Supervisor

Casino Expands Recycling Efforts in 2015!

The Morongo Casino Resort and Spa collects and recycles mixed recyclables (paper, plastics, tin cans, glass, aluminum, etc.), cardboard, scrap metal, and electronic wastes. In 2015, MCRS began separately collecting and recycling California Refund Value (CRV) beverage cans and bottles. Staff pull CRV beverage containers from recycle bins and some trash bins on the casino floor, dump out the liquid, and sort the containers into PET Plastic (#1), Clear Glass, Brown Glass, Blue/Green Glass, and Aluminum. It is a dirty job sorting through trash bags and their efforts have greatly improved the recycling program! Sorting increases recycling collection, makes the recycled materials more valuable, reduces contamination in the recycling bins from liquid and food wastes, and increases the program revenues and savings! The graph above shows the casino's recycling efforts from 2014 compared to 2015 when the casino began the CRV program. Before sorting, CRV beverage containers were commingled in the mixed recycling bins. The total weight (in tons) of mixed recycle materials and CRV beverage containers increased by 11% in 2015 thanks to the casino's extra collection efforts!



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Cartons are now recyclable in your curbside bin!



Refrigerated cartons are 80% paper with a thin layer of plastic and shelf-stable cartons (such as soy milk cartons) are 74% paper with thin layers of plastic and aluminum. All of these materials are recyclable although it can be challenging to separate the different components. The Materials Recovery Facility in Riverside, which accepts our commingled recyclables, has received new equipment from The Carton Council to help divert these recyclable cartons from the landfill and to help communities reach the State recycling goal of 75%. Glossy cardboard cartons for milk, juice, soup, and other foods are now accepted for recycling in your curbside bin! Recycling cartons is easy—remove plastic caps and straws and place empty cartons in your recycling bin, no rinsing required!

It's Time to Declutter!

Morongo Social Services and Morongo Environmental Protection Department—Pollution Prevention Program will be holding a special collection event this June to help you declutter and properly recycle and dispose of your clutter!

Event Details:

Friday, June 10
Community Center
11 am—3pm
Lunch will be provided!

We will accept:

Documents and CD's for On-Site Shredding
Unwanted Medications
Small Electronics, Appliances, and Batteries
Clothing and Household items for Goodwill



POLLUTION PREVENTION PROGRAM

Harmful Algal Blooms

Written by: Kimberly Miller, Environmental Specialist

Algae (simple plants or phytoplankton) serve as the lowest and most important organisms in many aquatic food chains. There are several types of algae. Red algae, golden algae, dinoflagellates, green algae, diatoms, and cyanobacteria (blue-green algae) are the most common freshwater types. When the prime conditions arise, algae can multiply very quickly to form an algal bloom. These blooms are caused by warm temperatures, plenty of sunlight, slow moving water, and nutrients (nitrogen and phosphorus). Some of these blooms are harmless, but others can have negative consequences. When the blooms use up the oxygen in the water, clog the gills of other aquatic organisms, block light to aquatic plants, create an odor, or produce toxins, they are categorized as harmful algal blooms (HABs). Cyanobacteria (in particular the *Microcystis* genus) tend to be common producers of toxic algal blooms which are referred to as cyanoHABs.

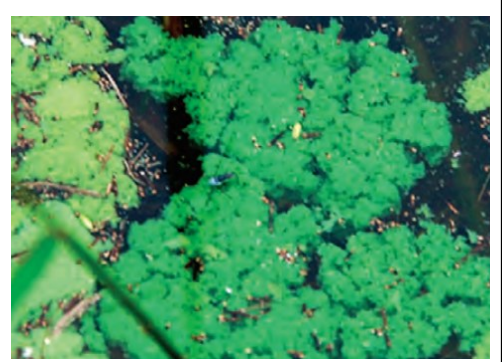
HABs occur in several locations and types of waterbodies. Red tides are a common name for HABs that change the color of marine water. Red tides regularly occur in the Gulf of Mexico. HABs occasionally cause shellfish along the coast of California to be unsafe to eat due to toxins accumulating in the organisms.

Commercial fishing for Dungeness and Rock crab was postponed or closed for many areas of California last year due to toxic HABs that cause Amnesic Shellfish Poisoning. Several lakes and rivers in northern California, particularly the Klamath River watershed, have had problems with cyanoHABs.

It is important to keep in mind that not all algae cause blooms, and not all blooms are toxic. Plants that are rooted in the water or that float on top, such as duckweed, can be mistaken for algae. It can be very hard to tell what kind of algae is present without a microscope. Green algae that has long, stringy filaments is usually not toxic. However, it is generally a good idea to avoid water that is discolored or where thick algae patches float on the surface. Some HABs cause skin irritation and respiratory problems when people come in close contact with water. Toxins produced by HABs can cause people and animals to become sick or die if they drink the water. If you fish, pay attention to any warnings posted at the waterbody or go online to search for any fish/shellfish consumption advisories (for California: <https://www.wildlife.ca.gov/Fishing/Ocean/Health-Advisories> or the Shellfish Biotoxin Information Line: (510) 412-4643 or toll-free at (800) 553-4133). If you are concerned about a possible HAB on the Reservation, contact the Morongo Tribal Water Program at (951) 755-5197.

You can reduce HABs by decreasing excess nutrients in waterbodies:

- Use less fertilizer
- Prevent animal waste from entering streams and ponds
- Make sure septic tanks are properly maintained.



Cyanobacteria, *Microcystis aeruginosa*



Cyanobacteria, *Gloeotrichia echinulata*



Euglenophyta, *Euglena sanguinea*, a known toxin producer

Morongo's Air Quality School Flag Program Update

Written by: Pamela Atcitty, Environmental Specialist

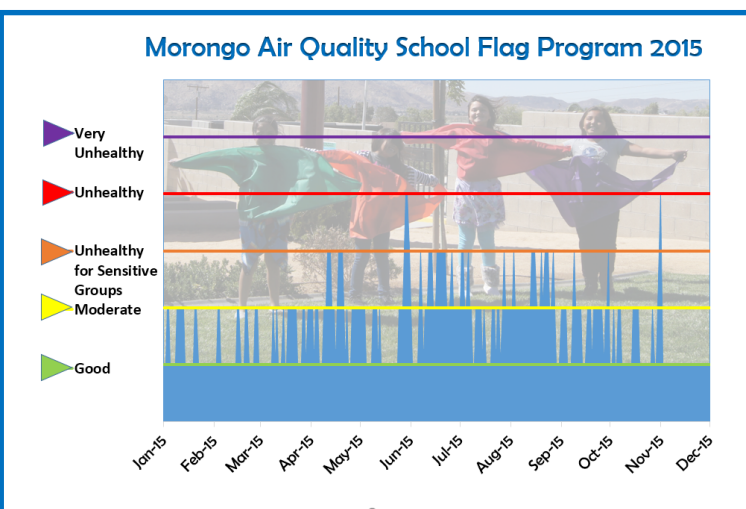
School Flag PROGRAM

Know Your Air Quality to
Protect Students Health



Morongo School Flag Program

Since the raising of the first flag on Earth Day in 2014, the School Flag Program at both Morongo campuses has been a success! The “Keepers of the Flag”, Ms. Vaughn’s class at the middle campus and Ms. Dye’s class at the upper campus have taken the responsibility of changing the flags according to the day’s Air Quality Index; reminding students to adjust their outdoor physical activities. The only problem the students have experienced is that they go long periods of time without having to change the flag, due to consistent days of the same air quality.



Morongo's 2015 Air Quality

As the graph indicates to the left, there are several days where the air quality is constantly “Good” or Moderate”, when students can play outside without much worry. During the summer months, air quality on Morongo trends into the areas of “Unhealthy for Sensitive Groups” with some spikes of “Unhealthy”. This has to do with the factors that make air pollution more severe in warmer weather.

Why is there more Air Pollution in the summertime?

Air pollution is kind of a seasonal thing. There are certain kinds of air pollutants that are worse in the summer. When we talk about air pollution being worse in the summer, generally we're talking about photochemical oxidants, pollutants like ozone, that react differently when exposed to extreme sunlight. During the summer, when there are longer days and more sunlight, there is more ultraviolet radiation and more stability in the atmosphere. That is, the air doesn't move; it sort of just sits and cooks. With ozone cooking in the atmosphere and simple chemistry going on, new compounds are formed that weren't there before causing an increase in air pollution.

Why should students know when their air is unhealthy?

When members of the Morongo school and community know what the daily air quality is, they can adjust their activities to reduce their exposure to air pollution. Regular physical activity— at least 60 minutes a day— promotes health and fitness. The purpose of the school flag program at Morongo is to help children continue to exercise while protecting their health when the air quality is unhealthy. Children, including those with asthma, can continue to stay active even when air quality is unhealthy by modifying their activities or, in some cases, moving their activities indoors.

Where else can you find information about Morongo's air quality?

You can find the daily AQI on the ACCESS channel and on the tribal website. Information and updates can also be found at: www.airnow.gov.



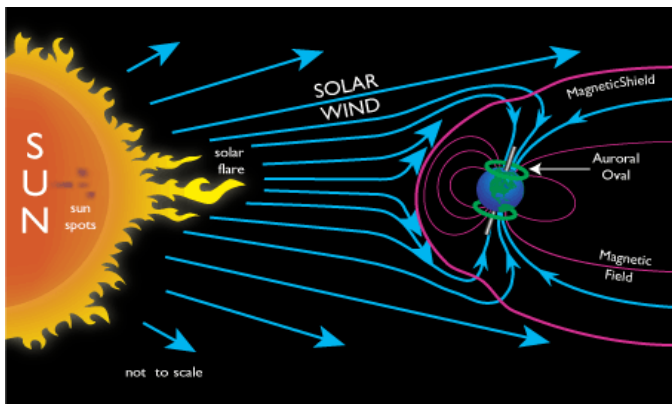
Night Lights

Written by: James Payne, Environmental Director

A few newsletters ago, I wrote about the Earth's magnetic field and magnetic declination. In this article, we'll see how that same magnetic field is also partly responsible for the phenomena known as auroras. Auroras are more commonly referred to as the northern or southern lights, or aurora borealis and aurora australis, respectively. Due to the part that our magnetic field plays in it, they are only visible at latitudes greater than the 35th Parallels. However, for optimum viewing of the northern lights, you would want to be much further north of that, into Alaska, Canada, Sweden, Greenland and the like. The National Oceanic Atmospheric Administration (NOAA) actually recommends between 60 and 75 degrees latitude.



The reason for their polar centered location is dependent on how auroras are formed. Our sun provides energy in the form of sun storms, which are also known as coronal mass ejections (CME), which emit electrons that rapidly enter our atmosphere. These electrons have a negative charge, hence, they are attracted to and follow the Earth's magnetic field. The energy of these accelerated electrons is transferred when they collide with the differently charged nitrogen and oxygen atoms in our atmosphere. Those ions that are created then release their energy in the form of heat and light, the light forming the auroras. Since the magnetic field is strongest nearest the north and south poles, the auroras occur and are more easily visible closer to the poles.



<https://www.quora.com>

Different colors of the lights are caused by whether the nitrogen and oxygen are atoms (by themselves) or in compounds. Varying altitudes of our atmosphere will contain these different arrangements of nitrogen and oxygen. Those are the reasons why nature's brilliant light show happens between 50 and 250 miles up into our atmosphere and the colors range from red, pink, orange, green, and purple (do you know Roy G. Biv?).

Another awesome thing about auroras is the degree of predictability that they have. The best time to view them is usually from August to April, with optimum times correlating to the equinoxes in March and September. A coronal mass ejection also can take up to 3 days to reach our atmosphere, so by watching the space weather, you can get a heads up a few days in advance for when to check out the lights. And if you want to do some long term planning, 2024 should be a good year for the northern/southern lights based off of the sun's 11-year sunspot schedule!



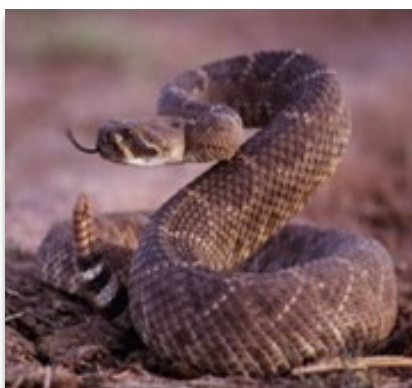
<http://www.webexhibits.org/causesofcolor/4D.html>

Snakes on Morongo

Written by: Jon Castillo, Environmental Technician

As days get hotter, snakes will come out of hibernation. Snakes hibernate in underground burrows and under rocks. They love warm weather and prefer 80-90 degree temperatures. When temps become too hot for snakes, they will seek shade. The shaded areas could be under your car, house, porch, shrubs, gardens, dog houses, rocks, etc. We can avoid being harmed by a snake by using caution and looking ahead on paths. Most snake bites occur when people step on them, try to catch them, mishandle them, or make the snake feel threatened. Below are a few of the snakes found here on Morongo.

Rattlesnakes (Genus *Crotalus*)



Rattlesnakes are VENOMOUS and should be avoided if possible. Rattlesnake bites are the leading cause of snakebite injuries in North America. Rattlesnakes receive their name from the rattle located at the end of their tails, which makes a loud rattling noise when shaken that deters predators and serves as a warning.

Red Racer (*Coluber flagellum piceus*)

The Red Racer is not venomous, but it is mean-tempered and its bite can tear flesh. It can be seen on the roads sunning itself in the morning hours. It is the fastest snake in the desert, moving up to 7 mph, and can reach up to 6 feet long with a slender, whip-like body.



Gopher Snakes (*Pituophis catenifer*)

Gopher snakes are not venomous and are one of the most common snakes in California. They are active during the day and also active after sundown on hot days. Its pattern and coloring mimics the Rattlesnake and when this snake feels threatened, it will curl up like a Rattlesnake and hiss.

California King Snake (*Lampropeltis getula californiae*)

California King snakes are not venomous and are one of the most popular reptile pets due to their ease of care, attractive appearance, and the ability to be tamed. A king snake can live up to 20 years.



If you run into a snake, leave it alone. If you need the snake removed from the area call Patrol at (951) 755-5302 or after hours at (909) 634-4827.

If you are bitten by a snake, try to identify the snake and get medical treatment.

If you are bitten by a Rattlesnake, call 911 and stay calm until help arrives.

WILDLIFE MANAGEMENT

Household Hazardous Waste & Electronic Waste Drop-Off

**Saturday,
May 21
9am to 12pm**

Behind Public Works
For more information,
call 755-5198



**Tires, Oils, Household
Chemicals, Paints,
Pesticides, Batteries,
Sharps and Electronics**

Save The Date...

Earth Day 2016

**Friday,
April
22nd**

10am-3pm

**Free event! Local
Environmental
Entities, Games,
Activities, Lunch,
Raffle Prizes &
Much More**

**at Morongo
Admin.
12700
Pumarra Rd.**

If you would like to receive electronic versions of the Morongo Environmental Protection Department's Quarterly Newsletter and information on other Environmental Events, sign up at www.morongonation.org/content/environmental-newsletter-email-signup or email epd@morongo-nsn.gov and request to be added to the list! Prefer a copy mailed to you, no problem! You can sign up at www.morongonation.org/content/newsletter or email us at epd@morongo-nsn.gov

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